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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/673,808	01/12/2001	Mark Poletti	0074-26485GW	5524

110 7590 12/04/2003

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EXAMINER

CHAU, COREY P

ART UNIT PAPER NUMBER

2644

DATE MAILED: 12/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/673,808

Applicant(s)

POLETTI, MARK

Examiner

Corey P Chau

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 6 and 7 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 January 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ 6) ☐ Other:

DETAILED ACTION

Specification

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.

2. The disclosure is objected to because of the following informalities: on page 10, line 20 the word "if" is used, but should be replaced with "of".

Appropriate correction is required.

3. The disclosure is objected to because of the following informalities: on page 10, line 35 contains "-two way", which should be "two-way".

Appropriate correction is required.

4. The disclosure is objected to because of the following informalities: on page 10, lines 20- 25 the sentence "For example, in the system of Figure 2 the reverberation matrix may split the signal from each of microphones m1, m2, and m3 to feed two reverberators instead of three, and the reverberator output from microphone m1 may then be connected to speaker L1 and L3, from microphone m2 to speakers L3 and L2, and from microphone m3 to speakers L2 and L3." is inconsistent with claim 7, lines 4-6, "microphone through one or more reverberators to at least two loudspeakers each of which receives a signal comprising a sum of at least two reverberated microphone signals." Loudspeaker L1 does not receive a signal comprising a sum of at least two reverberated microphone signals.

Appropriate correction is required.

Claim Objections

5. Claim 1 objected to because of the following informalities: the preamble "in-line early enhancement generation system" is missing the word "reflection".

Appropriate correction is required.

6. Claims 2, 3, 4, 5, 6, and 7 are objected to because of the following informalities: For examining purposes the preamble of Claim 1 is "in-line early reflection generation system". Therefore the preamble "in-line early reflection enhancement system" of Claims 2, 3, 4, 5, 6, and 7 are inconsistent with the preamble of Claim 1.

Appropriate correction is required.

7. Claims 6 and 7 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims have not been further treated on the merits.

Claim Rejections - 35 USC § 112

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

9. Claims 1 and 8 recites the limitation "the delay times" in line 8 of Claim 1 and in line 12 of Claim 8. There is insufficient antecedent basis for this limitation in the claim.

10. Claims 1 and 8 recites the limitation "said early reflected energy" in line 10 of Claim 1 and line 13 of Claim 8. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 1 recites the limitation "the room" in line 11. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 1, 2, 3, 4, 5, 8, 9, 10, 11, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S Patent No. 5862233 to Poletti (hereafter as Poletti (1)) in view of U.S. Patent No. 5729613 to Poletti (hereafter as Poletti (2)).

Regarding Claim 1, Poletti (1) discloses a system that may be used in combination with or supplement by any other assisted reverberation system such as an in-line system, wherein the in-line system may be added to allow control of the early reflection sequence (i.e. in-line early reflection enhancement generation system) (column 6, lines 21-25). As disclosed, an in-line system comprising of one or more directional microphones to pick up a direct sound produced on stage by a performer and then processed by feeding it through delays, filters and reverberators, and broadcast into the auditorium from several loudspeakers (column 1, lines 9-19). The in-line systems minimize feedback between the loudspeakers and microphones by placing the microphones as close as practical to the performers (column 1, lines 19-24). However, Poletti (1) lacks a unitary power gain. Poletti (2) discloses an in-line system that utilizes

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the reverberator as mention above will have a greater propensity to become unstable since the reverberator produces a fluctuating loop gain that at some frequencies is higher than the loop gain without the reverberator. Therefore, a reverberator with a lower degree of fluctuation in its frequency response will reduce the problem. A low degree of fluctuation requires that the reverberator have a constant magnitude at all frequencies (column 3, lines 12-28). Hence, the unitary system of Poletti (2) as disclosed has a constant norm and unit power gain for all frequencies (column 5, lines 6-8). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system of Poletti (1) with the teaching of Poletti (2) to have the matrix of Poletti (1) to have a lower degree of fluctuation in its frequency response to reduce the problem of having a greater propensity to become unstable. A low degree of fluctuation requires that the reverberator have a constant magnitude at all frequencies.

14. Regarding Claim 2, Poletti (1) as modified, discloses a cross couple matrix (Fig. 4).

15. Regarding Claim 3, Poletti (1) as modified, discloses other possible arrangements such as "a single or two microphones, or four or five or more microphones, feeding one or two, or four or five or more loudspeakers or groups of loudspeakers, through one or two, or four or five or more groups of one, two, four, or five or more reverberators" (column 6, lines 13-20).

16. Regarding Claim 4, Poletti (1) as modified, discloses an orthonormal cross couple matrix (column 9, lines 5-12).

17. All elements of Claim 5 are comprehended by Claim 1. Claim 5 is rejected for reasons stated above apropos of Claim 1.

18. All elements of Claim 8 are comprehended by Claim 1. Claim 8 is rejected for reasons stated above apropos of Claim 1 (Fig. 2).

19. All elements of Claim 9 are comprehended by Claim 1 and 2. Claim 9 is rejected for reasons stated above apropos of Claim 1 and 2.

20. All elements of Claim 10 are comprehended by Claim 1 and 3. Claim 9 is rejected for reasons stated above apropos of Claim 1 and 3.

21. All elements of Claim 11 are comprehended by Claim 1 and 4. Claim 11 is rejected for reasons stated above apropos of Claim 1 and 4.

22. All elements of Claim 12 are comprehended by Claim 1. Claim 12 is rejected for reasons stated above apropos of Claim 1.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect in-line early reflection system in general:

U.S. Patent No. 5452360 to Yamashita et al.

U.S. Patent No. 5555306 to Gerzon.

U.S. Patent No. 6091824 to Lin et al.


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24. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Corey P Chau whose telephone number is (703)305-0683. The examiner can normally be reached on Monday - Friday 9:00 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Forester W Isen can be reached on (703)305-4386. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

November 25, 2003


FORESTER W. ISEN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600